09/838708

POSITION DETECTING SYSTEM AND METHOD

ABSTRACT OF THE DISCLOSURE

A system and method for detecting the position of an object are disclosed. A position detection system for locating an object including a resonator comprises an array of parallel conductors responsive to the magnetic field from the resonator, and a plurality of receivers each associated with a parallel conductor. The array of parallel conductors is configured to locate the object along a measurement path. The array of parallel conductors is orthogonal to the measurement path. The system further comprises a plurality of drivers each associated with a parallel conductor and configured to drive current through to produce an energizing field. The array of parallel conductors is provided with sinusoidally varying spacing and driven with sinusoidally varying current. In another embodiment, the array of parallel conductors is provided with constant spacing, and the receivers are configured with gain factors to produce reception similar to reception by sinusoidally spaced conductors. The array of parallel conductors may be driven with three-phase currents to eliminate stationary null points in the energizing field along the lengths of the parallel conductors. A method of detecting position of an object including a resonator comprises

providing an array of parallel conductors, providing a plurality of receivers, and associating each of the receivers with a parallel conductor.